

**Applicant:** CANADIAN INOVATECH INC. et al DT12 Rec'd PCT/PTO 17 MAR 2005  
**Serial No.:** PCT/CA2003/001359  
**Title:** ANTIMICROBIAL COMPOSITION AND METHOD FOR USE  
**Filed:** 18 September 2003  
**Our Ref.:** 3342078.0011(old) 228513.00011(new)

June 23, 2004

**VIA FACSIMILE**  
**(with confirmation by mail)**

International Preliminary Examination Authority  
European Patent Office  
D-80298 Munich  
Germany

Dear Sir:

In accordance with Article 34(1) of the *Patent Cooperation Treaty* and Rule 66.3 and 66.8 of the *Regulations Under the PCT*, Applicant hereby replies to the Written Opinion dated May 4, 2004 and submits amendments to the claims as currently pending as reflected in the enclosed claim amendment pages.

By reason of the present amendment, the following has occurred:

- Claims 1 – 22 are replaced by new claims bearing the same respective numbers; and
- Claims 23 - 31 are cancelled.

It is respectfully submitted that the amended claims are in compliance with PCT practice regarding medical use/treatment. Entry of the present amendment in the subject application is respectfully requested.

Pursuant to Rule 66.4 of the Regulations under the PCT, applicant further respectfully requests that the Examiner prepare a second written opinion on the basis of these amendment submitted herewith.

Respectfully submitted,

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Agents for the Applicant  
per:

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## WHAT IS CLAIMED IS:

1. As an agent for suppressing the growth of enteric pathogens in the gut of livestock and for preventing and treating gastrointestinal infections in livestock, the antimicrobial composition comprising:
  - (a) a cell wall lysing substance or its salt;
  - (b) an antimicrobial substance; and
  - (c) a sequestering agent.
2. The antimicrobial composition according to claim 1, wherein the enteric pathogens include members of the following families of bacteria: *Clostridium perfringens*, *Escherichia coli*, *Salmonella Typhimurium* and *Salmonella Mbandaka*.
3. The antimicrobial composition according to claim 1, wherein the cell wall lysing substance or its salt is lysozyme.
4. The antimicrobial composition according to claim 1, wherein the antimicrobial substance is selected from the group consisting of: (a) dried egg powder; (b) albumen; and (c) dried egg powder and albumen.
5. The antimicrobial composition according to claim 4, wherein the sequestering agent is an organic acid.
6. The antimicrobial composition according to claim 5, wherein the sequestering agent is a metal-chelator.
7. The antimicrobial composition according to claim 5, wherein the sequestering agent is selected from the group consisting of: (a) disodium ethylenediamine tetraacetate (EDTA); (b) citric acid; (c) chitosan.
8. The antimicrobial composition according to claim 1 further includes a lantibiotic.

9. The antimicrobial composition according to claim 8, wherein the lantibiotic is nisin.
10. The antimicrobial composition according to claim 8, wherein the ratio of the cell wall lysing substance or its salt, the antimicrobial substance, the sequestering agent and the lantibiotic, is 50:150:50:20 by weight.
11. The antimicrobial composition according to claim 1, wherein the antimicrobial composition is in powdered form.
12. The antimicrobial composition according to claim 1, wherein the antimicrobial composition is in liquid form.
13. The antimicrobial composition according to claim 12, wherein the antimicrobial composition is water-soluble to allow the antimicrobial composition to be mixed with drinking water for administration to the livestock.
14. The antimicrobial composition according to claim 1, wherein the antimicrobial composition is a feed additive.
15. The antimicrobial composition according to claim 1, wherein the gastrointestinal infections include necrotic enteritis, *Clostridium perfringens* enteritis and diarrheal disease.
16. The antimicrobial composition according to claim 1, wherein the ratio of the cell wall lysing substance or its salt, the antimicrobial substance and the sequestering agent, is 2:5:3 by weight.
17. The antimicrobial composition according to claim 1 wherein the antimicrobial substance is dried egg powder and the dried egg powder is capable of suppressing additional microbes in the livestock gut.
18. The antimicrobial composition according to claim 17 wherein the additional microbes include molds and viruses.

19. The antimicrobial composition according to claim 1 wherein the antimicrobial substance is dried egg powder and the dried egg powder is capable of suppressing additional enzymes in the livestock gut.
20. The antimicrobial composition according to claim 19 wherein the additional enzymes include proteases and lipases.
21. An antimicrobial composition for use in the prevention and treatment of gastrointestinal infections in livestock, the antimicrobial composition comprising:
- (a) a cell wall lysing substance or its salt;
  - (b) an antimicrobial substance;
  - (c) a sequestering agent; and
  - (d) a lantibiotic.
22. An antimicrobial composition for suppressing the growth of enteric pathogens in the gut of livestock comprising:
- (a) a cell wall lysing substance or its salt;
  - (b) an antimicrobial substance; and
  - (c) a sequestering agent;
- wherein the ratio of the cell wall lysing substance or its salt, the antimicrobial substance and the sequestering agent, is 2:5:3 by weight.